SERVICE MANUAL

ML300

Date	Revise Version	Description
2012.01.12	V1.0	Initial Issue
2012.05.23	V2.0	Add Engine Adjustment in chapter 2-10 Modify Pixel specification in chapter 4-3 Modify LED Calibration in chapter 4-4 Add Wavie Items in chapter 4-5

Prepared:Cherry   Checked:Amy   Approved: Alick

Preface

This manual is applied to ML300 projection system.The manual gives you a brief description of basic technical information to help in service and maintain the product.

Your customers will appreciate the quick response time when you immediately identify problems that occur with our products.We expect your customers will appreciate the service that you offer them.

This manual is for technicians and people who have an electronic background.Please send the product back to the distributor for repairing and do not attempt to do anything that is complex or is not mentioned in the troubleshooting.

Notice:

The information found in this manual is subject to change without prior notice. Any subsequent changes made to the data herein will be incorporated in future edition.

ML300 Service Manual

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Manual Version 2.0

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Chapter 1

Introduction

1-1 Highlight

No	Item	Description
1	Dimensions (WxDxH)	• 184x105x (lower side)42 mm • 184x105x (upper side)44 mm
2	Weight	• < 700 g
3	Power Supply	• Auto-ranging: AC100V ~ 240V ± 10%, 50-60Hz DC Output : 19VDC/4.74A , 90W
4	Lens Type	• YM101
5	Platform	• D51 platform
6	Throw ratio	• WXGA 1.5 +/- 5%
7	System controller	• DPP 6401
8	LED Life	• 20,000 Hours Bright Mode @ 54W +/-10 %

9	Altitude	• Operating: 0 ~ 2,500 ft, for 5°C~35°C
		              2,500 ft ~ 5,000 ft, for 5°C~30°C
		              5,000 ft ~ 10,000 ft, for 5°C~25°C

10	DMD	• TI" DMD , 0.45" WXGA DMD
11	Power Consumption	• Full Mode: < 93W +/-10% @ 110VAC • Standby Mode < = 0.5W
12	LED Power	•Bright Mode: < 54W +/-10 % •PC Mode: < 48W +/-20 % •Cinema Mode: < 37 W +/-20 % •Photo Mode: < 43W +/-20 %
13	Video compatibility	•NTSC M/J, 3.58MHz, 4.43MHz •PAL BG/DK/I/M/N , 4.43MHz •480i, 480p, 576i, 576p, 720p, 1080i •follow section 8.4 timing table
14	Terminal	•VGA D-sub 15pin x1 (VGA port is black color coded) •AV (φ2.5mm) in x 1 •Mini HDMI v1.3 x 1 (compatible with video and audio) •Micro SD card slot x1 (without SD Card) (For Multimedia only) •USB Type A x1

1-2 Compatible Mode

● **Computer compatibility**

Compatibility	Resolution	V-Sync[Hz]
VGA	640 x 480	60Hz
	800 x 600	60/120Hz
	1024 x 768	60/120Hz
	1280 x 720	60Hz
	1280 x 800	60Hz
Video	480i / 480P	60Hz
	576i / 576P	50Hz
	720P	50Hz/60Hz
	1080i	50Hz/60Hz
HDMI	480i / 480P	60Hz
	576i / 576P	50Hz
	720P	50Hz/60Hz
	1080i	50Hz/60Hz

● **Compatibility: Multimedia Format**

Video			
File format	Video format	MAX resolution	Profile
AVI,MOV,MP4,3GP,MKV	H.264	1280x800 30fps	BP/MP/HP
AVI,3GP,.mov, wmv	MPEG4	1280x800 30fps	SP/ASP
AVI,MOV,MP4,3GP	xvid	1280x800 30fps	HD
FLV	Sorenson Spark	1280x800 30fps	Spark
WMV	VC-1	1280x800 30fps	SP/MP/AP
AVI, mov	MJPEG	1280x800 30fps	Baseline

Note: Video format does not support content with B-Frame function

Photo	
File format	File extension
BMP	*.bmp
JPG, JPEG	*.jpg, *jpeg
Audio	
AAC, MP3, PCM, ADPCM, WMA	
Microsoft Office Viewer	
Word document, PDF, Powerpoint, Excel, .txt	

Note: If the Computer Compatibility supportive signal is different from User's Manual, please refer to User's Manual.

Chapter 2

Disassemble And Repair Action

2-1 Equipment Needed & Product Overview

1. Screw Bit (+): No.00

2. Hex Sleeves 5mm

3. ML300 unit

Before you start: This process is protective level II. Operators should wear electrostatic chains.

2-2 Disassemble Top Cover Module

1. Take off 7 rubbers on bottom side (as yellow circles),and then unscrew 7 screws under the rubbers .

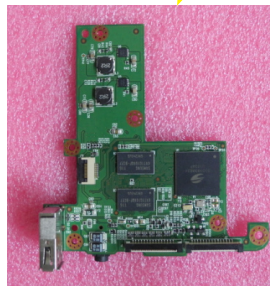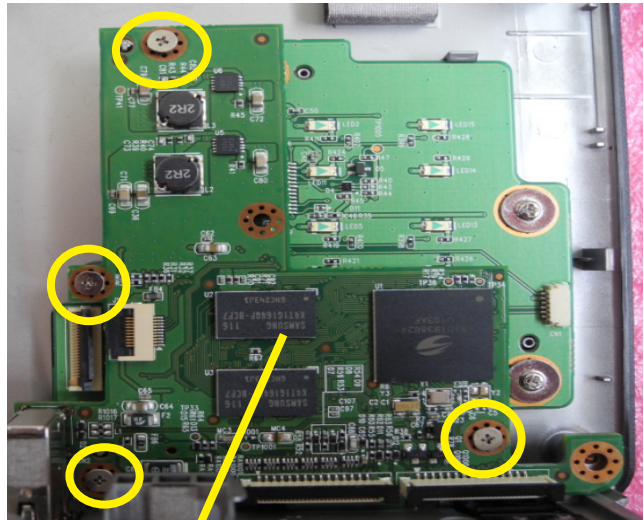2. Unplug the keypad cable and FPC cable(as yellow circles)
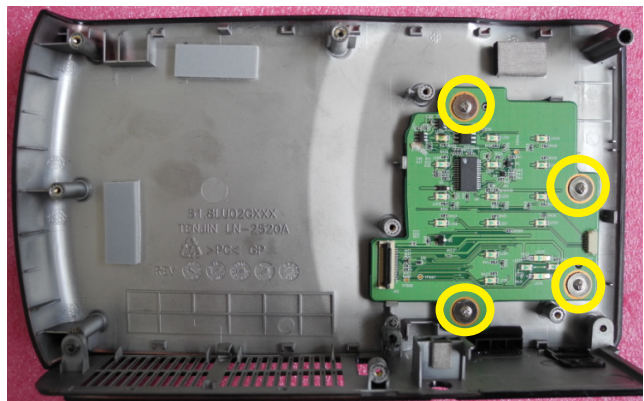

3. Disassemble the Top Cover module.

2-3 Disassemble Daughter Board and Keypad Board

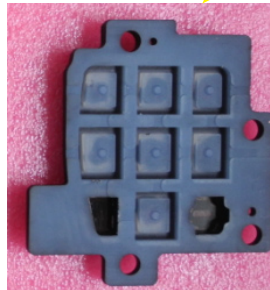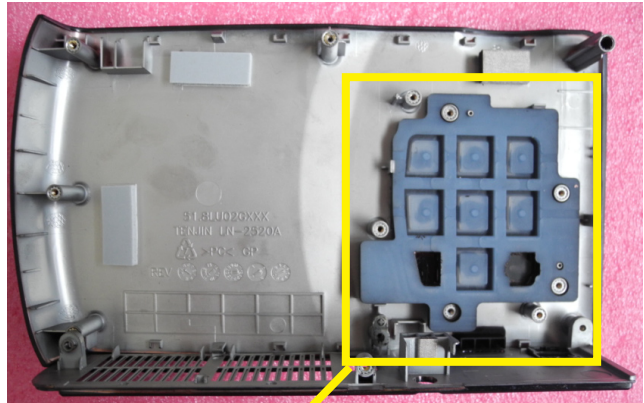1. Unscrew 4 screws from the daughter board (as yellow circles)

Daughter Board

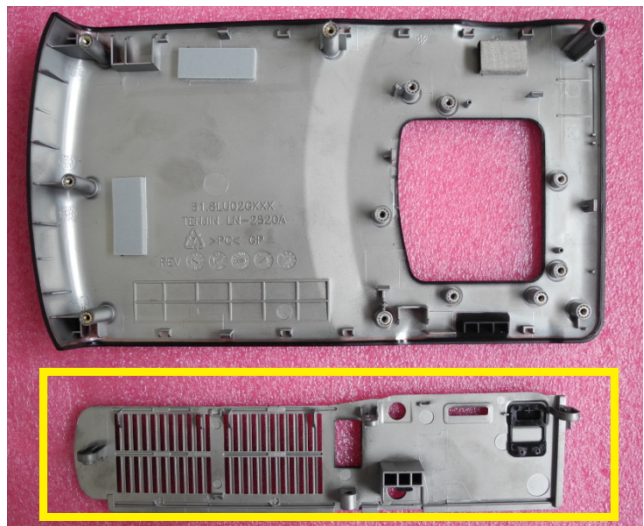2. Unscrew 4 screws from the keypad board (as yellow circles)

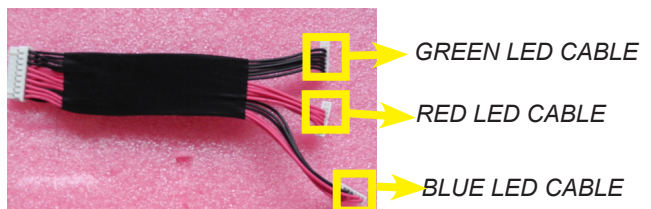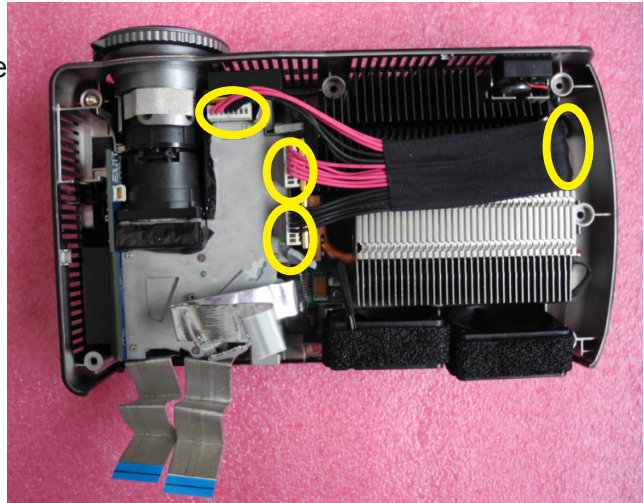3. Separate the keypad and the Top Cover Module.

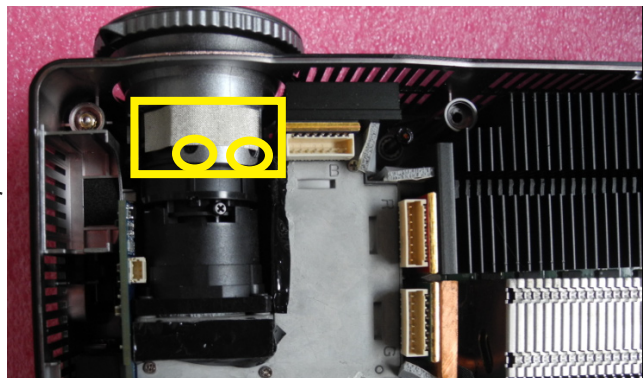
Keypad

4. Disassemble the IO cover from the top cover .

2-4 Disassemble LED Cable

1. Unplug 4 connectors to disassemble LED cable (as yellow circles).

GREEN LED CABLE
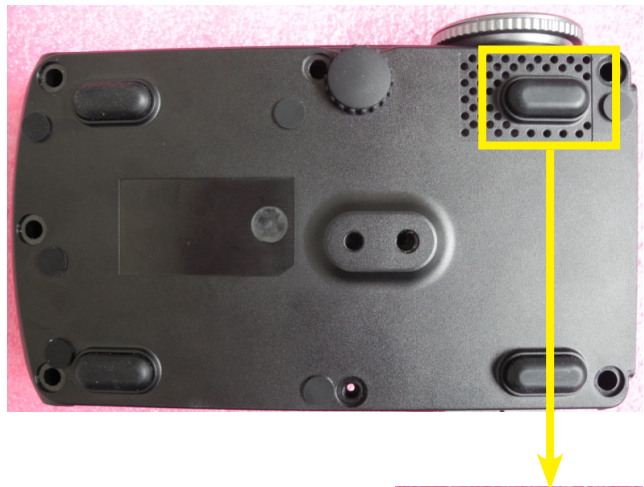
RED LED CABLE

BLUE LED CABLE

2-5 Disassemble Focus Ring

1. Tear off the mylar from the focus ring (as yellow square) and unscrew 2 screws under the mylar (as yellow circles).

2. Tear off the rubber from the bottom cover .

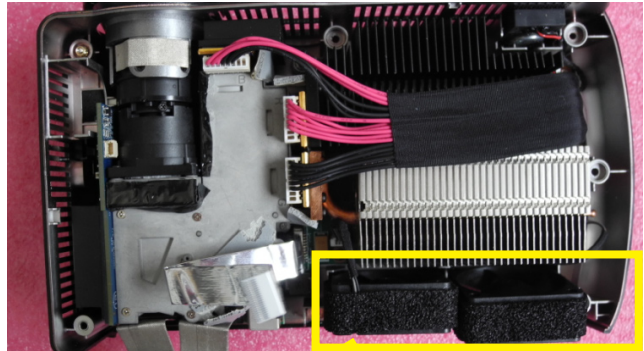3. Unscrew 1 screws to disassemble the focus ring (as yellow square)
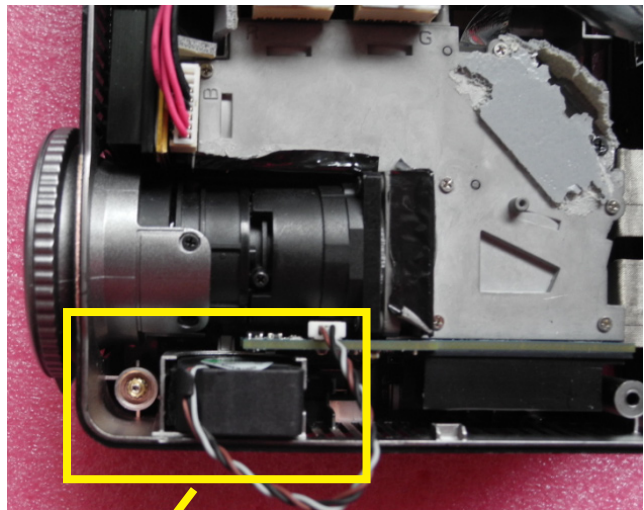

Focus Ring

2-6 Disassemble Fan

1. - Take off three Fans.

Note: Care the direction about how to place

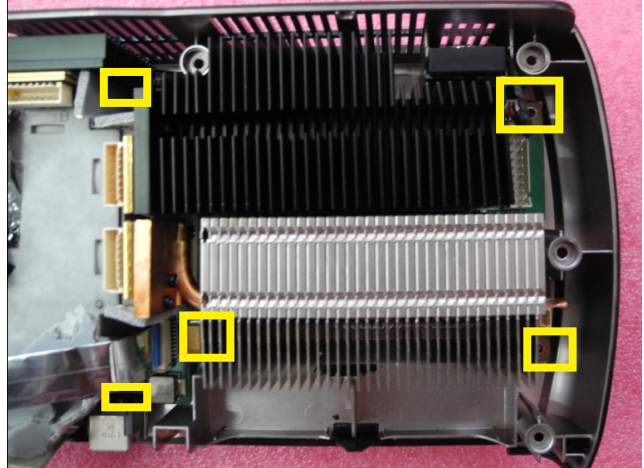   *the fan (as yellow square).*

- Tear off the mylar from the fans .

2-7 Separate Engine Module and Main board

1. Unscrew 5 screws from the Main board (as yellow squares)

2. Unscrew 2 screws (as yellow squares)

3. Unplug the speaker from the main board (as yellow squares) and take off the rubber from the speaker.
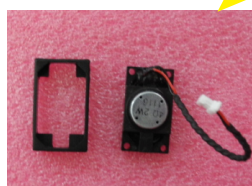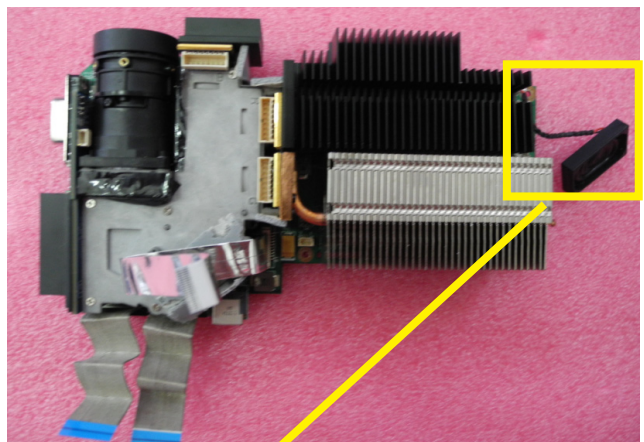
Speaker

4. Unscrew 3 screws from the Main board to separate main board and engine module (as yellow circles)
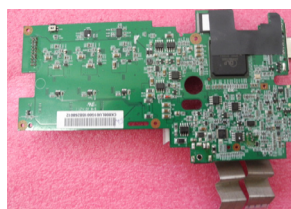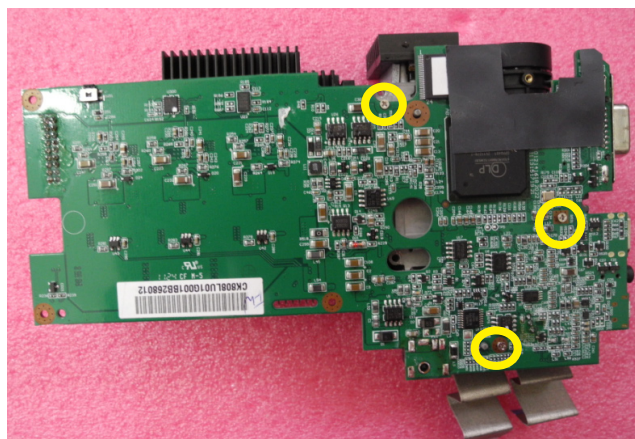
Main Board
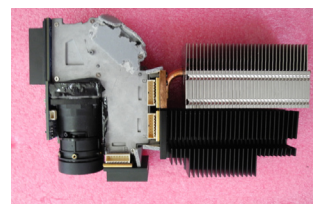
Engine Module

5. Unplug the keypad cable and FPC cable from main board (as yellow circles)
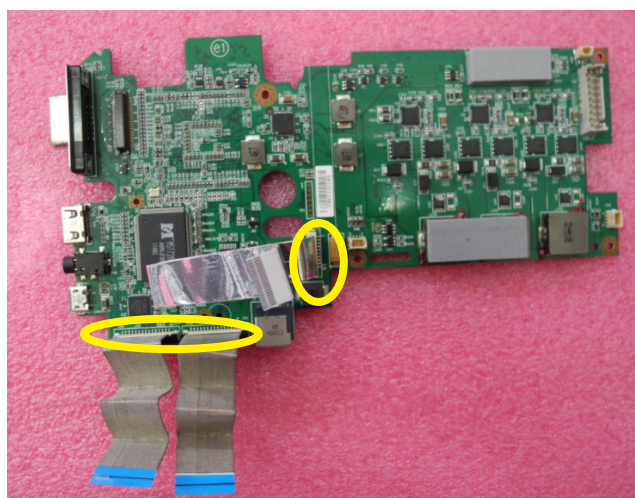
2-8 Disassemble Engine Module and LED

1. Unscrew 4 screws to disassemble heat sink and DMD board (as yellow circles).
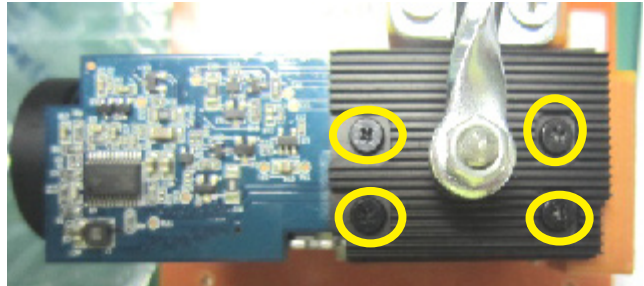
2. Separate heat sink and DMD board from engine module.
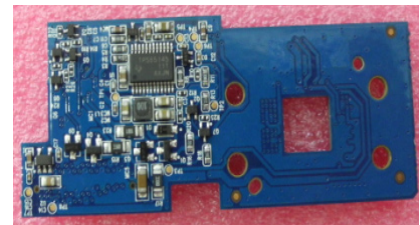
Heat sink   *DMD board*

3. Separate DMD chip and DMD chip rubber from engine module.
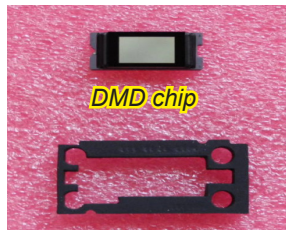
DMD chip

DMD chip rubber
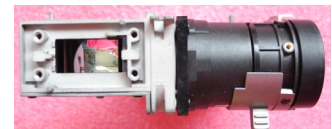
Engine

4. Unscrew 8 screws to disassemble 2 heat sink .
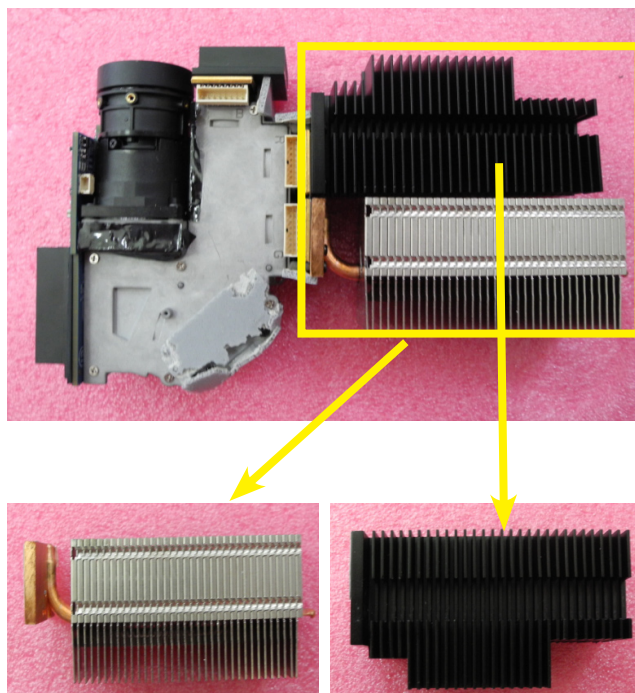
5. Disassemble the green and red LED from the engine module .

Green LED
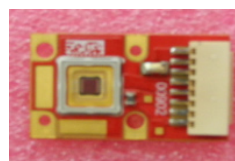
Red LED

6.Unscrew 2 screws to disassemble heat sink and blue LED (as yellow circles).
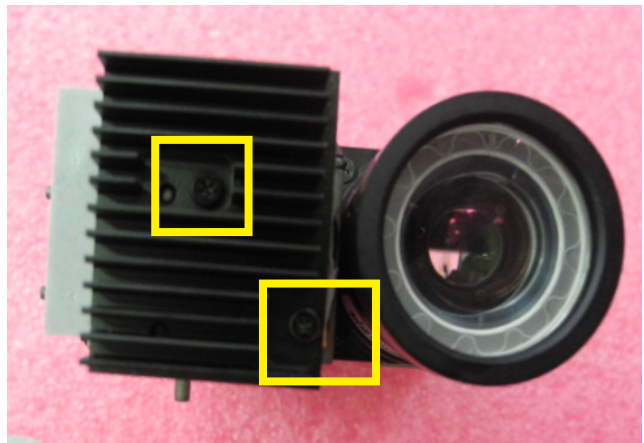
Heat sink
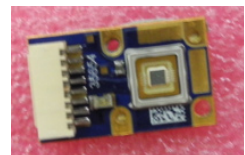
Blue LED

2-9 Disassemble Bottom Cover Module

1. Unscrew 1 screw and tear off 4 rubbers on the back of bottom cover to disassemble bottom cover Module .

2-10 Engine Adjustment

1. Environment Adjustment
- The distance between the projecton lens
  and the screen is 1.3m.
- This process should be done at a dark
  environment (under 2 Lux).

2. Procedure Adjustment
- Press "Up"->"Home"->"Down"->"Zoom"
  of remote control to get into service
  mode,then seclect "Test pattern".
- Change the screen to "white screen".
- Loosen the 2 screws slightly on the engine
  module,then use Pliers or other tools to
  knock the green square to readjust the
  image,until the image is normal.

3. Abnormal image inspection
- It should not have any abnormal color at the
  rim of the image by estimating through the
  eyes.
Note: - To avoid over adjusting the mirror.
*   - After the operation, please use the*
*   glue to fix the screws.*
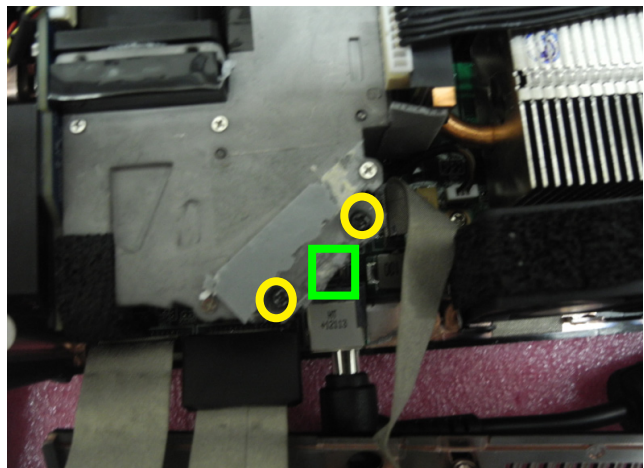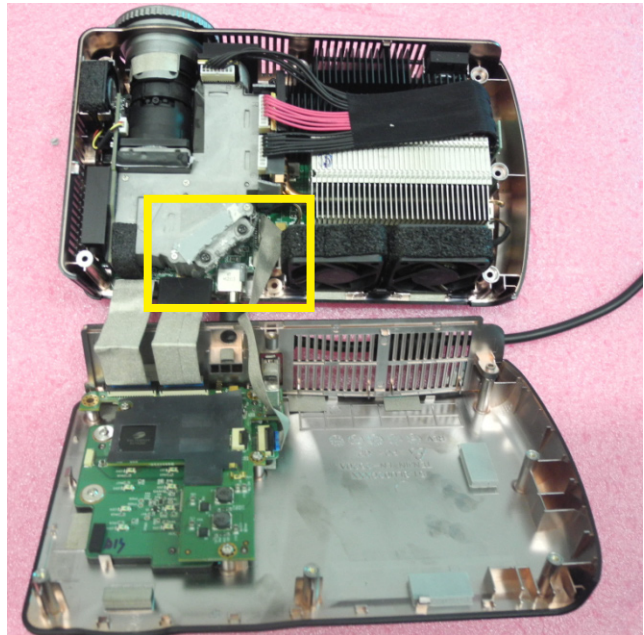
2-11 Repair Action

Repair Action	Change Parts			Software	Description page
	Main Board	Engine Module	Fan	Firmware	
Version Update	V			V	Chapter 5
Reset LED Calibration		V			Chapter 4-4
PC Calibration	V	V		V	Chapter 4-4
Auto Keystone Calibration	V				Chapter 4-4
EDID	V				Chapter 6
OSD Reset	V			V	Chapter 4-6

Chapter 3

Troubleshooting

3-1 LED Lighting Message For Projector

Message	LED Indicator Button
Standby mode	Flashing 2 second(On),1 second (Off) orange
Fan lock error	Flashing Red
Over temperature	Flashing Red

3-2 Main Procedure

No	Symptom	Procedure
1	No Power	- Ensure the Power Cord ,Power adapter and AC Power Outlet are securely connected. - Ensure all connectors are securely connected and aren't broken. - Check FPC cable between Keypad Board and Main Board. - Check Keypad Board - Check Main Board
2	Auto Shut Down	- Ensure the environment temperature is under 40 degree C. - Ensure the projector is not put on a soft pad and the air vent is not blocked. - Check Fan Module - Check Main Board
3	No Light On	- Ensure all connectors are securely connected and aren't broken - Check Keypad Board - Check Daughter Board - Check Main Board - Check LED cable
4	No Image	- Ensure the Signal Cable and Source work (If you connect multiple sources at the same time, use the "Source" button on the control panel to switch) - Ensure all connectors are securely connected and aren't broken - Ensure all Multimedia Format Supported (detail in chapter 1-3) by the projector. - Check FPC cable between Daughter Board and Main Board. - Check Daughter Board - Check Main Board - Check DMD Chip - Check Engine Module
5	Mechanical Noise	- Check Fan Module
6	Line Bar / Line Defect	-Check if theMain Board and the DMD Board are assembled properly - Check Main Board - Check DMD Board - Check DMD Chip
7	Image Flicker	- Do "Factory Reset " of the OSD Menu - Ensure that the signal cables and source work well - Check Main Board
8	Dead Pixel / Dust (Out of spec.)	- Ensure the Projection Screen without dirt - Ensure the Projection Lens is clean - Clean DMD Chip and Engine Module - Check DMD Chip - Check Engine Module

No	Symptom	Procedure
9	Color Abnormal	- Do "Factory Reset " of the OSD Menu - Do LED calibration reset. - Check R,G,B LED Board. - Check Main Board - Check DMD Board
10	Poor Uniformity/ Shadow	- Ensure the projection screen is without dirt - Ensure the projection lens is clean - Do LED calibration reset. - Check R,G,B LED Board. - Check Engine Module.
11	Garbage Image	- Ensure that the signal cables and source work well. - Check Daughter Board - Check Main Board
12	Remote Control Failed	- Check Battery. - Check Remote Controller. - Check Keypad Board - Check Main Board
13	Function Abnormal	- Do "Factory Reset " of the OSD Menu - Check Daughter Board - Check Main Board
14	Audio Abnormal	- Ensure that the signal cables and source work well - Check FPC cable between Daughter Board and Main Board. - Check Speaker Module - Check Main Board

Function Test & Alignment Procedure

4-1 Test Equipment Needed

- PC with SVGA/XGA resolution

- DVD player with Multi-system, equipped "Component", "S-Video","Composite" and "HDMI".

- HDTV Source (480P, 720P, 1080i, 1080P)

- Minolta CL-200

- Quantum Data 802B or CHROMA2327 (Color Video Signal & Pattern Generator)

4-2 Test Condition

- Circumstance brightness: Dark room less than 2.0 lux.

- Inspection distance: 0.8M~1M functional inspection.

- Screen size: 30 inches diagonal.

Zone Definition
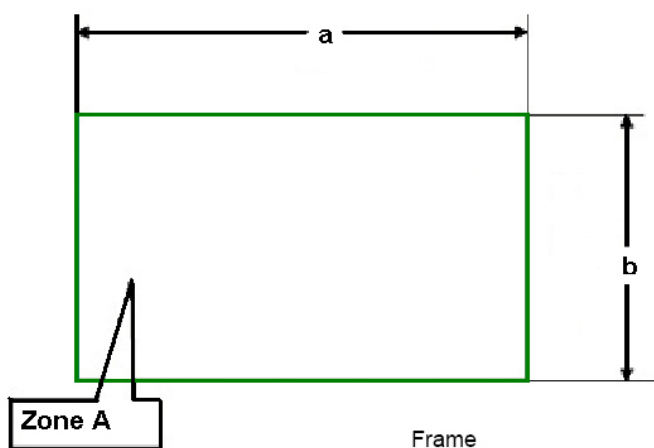
< Figure: Zone A(as green line) Definition >

4-3 I/O Port Test

4-3-1 VGA Port Test

1. Frequency and Tracking Boundary

Procedure
- Test equipment: video generator
- Test signal: 1280*800@60Hz
- Test Pattern: Genera l-1
- Check and see if the image sharpness is well performed.

Inspection item
- Check if there is noise on the screen.
- Horizontal and vertical position of the video should be adjustable to the screen frame.

Criteria
- If there is noise on the screen, the product is considered as failure product.
- The PC mode functionally sure be workable include support format with frequency and auto detected functional will be workable.
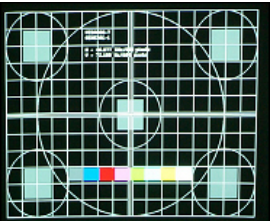
General -1

2. Bright Pixel

Procedure	- Test equipment: video generator
	- Test signal :1280*800@60Hz
	- Test Pattern: Full black
Inspection item	- Bright pixel check
Criteria	- Please refer to Pixel specification table.

Full black

3. Dark Pixel

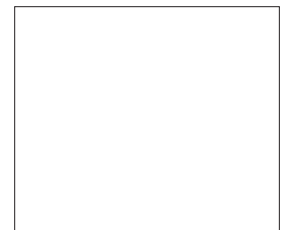|	
Procedure	- Test equipment: video generator
	- Test signal: 1280*800@60Hz
	- Test Pattern: Full white
Inspection item	- Dark pixels check
Criteria	-Please refer to Pixel specification table

Full white

4. Bright Blemish

Procedure	- Test equipment: video generator
	- Test signal: 1280*800@60Hz
	- Test Pattern: Gray 10
Inspection item	- Bright blemish check
Criteria	- Please refer to Pixel specification table.

Gray 10

5. Dark Blemish

Procedure	- Test equipment: video generator
	- Test signal: 1280*800@60Hz
	- Test Pattern: Blue 60
Inspection item	- Dark blemish check.
Criteria	-Please refer to Pixel specification table

Blue 60

Pixel specification

Order	Symptom	Pattern	Criteria
1	Bright pixel (dots)	Gray 10 pattern	A=0
2	Dark pixel(dots)	White pattern	A ≤ 4
3	Bright blemish	Any pattern	Blemishes are allowed
4	Dark Blemish	Any pattern	Blemishes are allowed
5	Bright dot on frame	Gray 10 pattern	≤ 1
6	Unstable pixel	Any pattern	A = 0
7	Adjacent dark pixel	Any pattern	A = 0

6. Focus Test
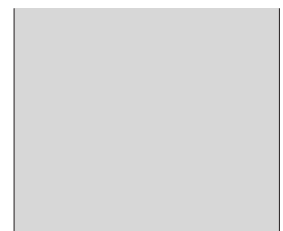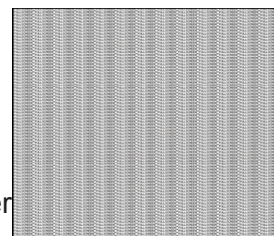
Procedure   - Test equipment: video generator

                      - Test signal:1280*800@60Hz

                      - Test Pattern: Full screen

Inspection Distance   - 0.8M~1M

Inspection item   - Focus check

Criteria   - From screen 1M via visual to check focus, look at the
entire screen, focus shall be clear,crisp and sharp over
the entire surface of the display pattern. (Blur word
on one of thecorner after adjustment is acceptable.
However, the word should at least be recognizable.)

Unbalance   - After adjust the lens ,if the diagonal or adjacent two
grids vague,it will be regarded as" NG"

Full Screen

7. Color Performance

Master

Procedure	- Test equipment: video generator.
	- Test signal: 1280*800@60Hz
	- Test Pattern: Master, 64 gray RGBW or 32GRAYS
Inspection item	- Check if each color level is well-functioned.
	- Color saturation

Criteria

- Screen appears normal. It should not have any abnormal condition, such as lines appear on the screen and so on.

- Color appears normal.

- It is unacceptable to have few lines flashing.

- RGBW should all appear normal on the screen and sort from R-G-B-W.

- Color levels should be sufficient and normal. (The unidentified color levels on both left and right sides should not over 4 color levels.)

- Gray level should not have abnormal color or heavy lines.

- If color appears abnormal, please get into serice mode to do color wheel index adjustment.
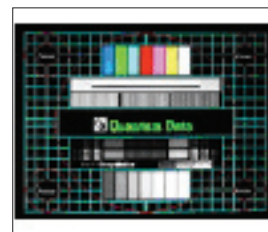
64 gray RGBW

32GRAYS

4-3-2 AV Input Port And Audio Out Port

Procedure	- Test equipment: DVD player
	- Test signal: CVBS
Inspection item	- Audio performance test
Inspection Distance	- 0.8M~1M
Criteria	- Check the sound from speaker.
	- Check "Volume" is normal
	- Check "Mute" is normal
	- Ensure the image and audio are well performed

4-3-3 HDMI Test

Procedure   - Test Signal : 1080i

                   - Test Pattern : Any Pattern

                   - Equipment: DVD Player with HDMI output

Inspection item   - HDMI Test

Criteria   - Ensure the image and audio are well performed
                     and the color can not discolor.

4-3-4 Micro SD Card /USB flash disk/ Micro USB Test

1. Micro SD Card Test

Procedure   - Test equipment: SD Card (include test pattern)

                   - Test Pattern: photo ,video or audio

                   - Turn on the projector and plug SD Card into the
                     projector.

                   - Press " Home " button and "O" of remote controller
                     to play the files

                   - Get into service mode.

Inspection item   - Color saturation

Criteria   - The color should appear normal and sort in right order.

2.USB flash disk Test
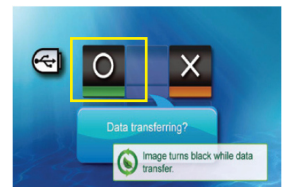
Procedure
- Test equipment: USB flash disk (include video file).
- Test Pattern: video file
- Turn on the projector and plug USB flash disk into the projector.
- Select "Home"-->"O"of remote controller,then play video file in USB flash disk.

Inspection item
- Check any abnormal color, any noise on the screen.
- Check the sound from speaker.

Criteria
- The video is played smoothly and the voice sounds normal.

3.Micro USB Test

Procedure
- Test equipment:Micro USB
- Test Pattern: PC file
- Turn on the projector and plug Micro USB cable into the projector.
- USB connected OSD will appear automatically
- Select "USB Display"(as red square), the PC information will be shown .
- Select "Data Transfer" (as yellow square),then select "O" to confirm transfer. The screen turns black after 60 seconds for power saving. Press to wake up the display.

Inspection item
- Check any abnormal color, any noise on the screen.
- Check the sound from speaker.

Criteria
- The video is played smoothly and the voice sounds normal.

4-4 Calibration

1. PC Calibration

Note:If the white/black value of VGA signal abnomal, you can do the "PC calibration"

Procedure   - Test equipment: video generator

       - Once Main Board ,Engine Module ,or upgrading
         firmware is changed, PC Calibration should be done
         as well.

        (1) Test signal analog: 1280X800@60Hz

        (2) Test Pattern: 94%W/6.4%W

       - Note

        (1) Calibration pattern should be in full screen mode.

        (2) Please press "Up"->"Home"->"Down"->"Zoom" of remote controller to get into Service Mode.

        (3) Choose "PC Calibration" for correction.When the message "Success" appears, it means "PC Calibration" is OK. Choose "Exit" to leave the Service Mode.

White/Black

Check pattern   - Test signal:1280*800@60Hz

       - Test pattern: 64 gray RGBW

        * After finishing PC adjustment, check 64 gray
         RGBW pattern.

Inspection item - Color saturation

Criteria   - There should not have any lack of RGBW. The
        color should appear normal and sort in right order.

       - Color levels should be sufficient and normal. (the
        unidentified color levels on both left and right
        sides should not over 8 color levels.)

64 gray RGBW

2.Auto Keystone Calibration

After replace main board, the "Auto Keystone Calibration" is needed:
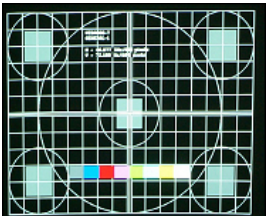
Procedure :   - Please put the Projector on a horizontal surface.

                - Press **"Up"->"Home"->"Down"->"Zoom" buttons of** remote controller sequentially to get into Service Mode.
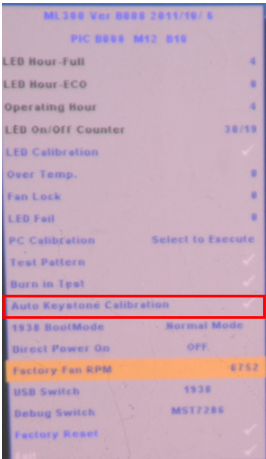
                - Press **"VGA" of remote controller , then select "Auto** Keystone Calibration

                - Press "Auto Keystone Calibration" for correction.

Check pattern   - Test signal:1280*800@60Hz

   - Test pattern: General-1

*General -1*

3. LED Calibration

Note:If the color abnormal, you can do the the "LED calibration" .

Procedure

(1)- Please press "Up"->"Home"->"Down"->"Zoom" of remote controller to get into Service Mode.

- Press "Enter into LED Calbration"

- Press "O" of remote controller to start calibration and "Fail" will appear in right blank,it means it has return to default value.

Note:System Firmware C04 will phase in this function.

(2) - Put the CL200 on the center of the screen

- Connect LED Calibration Fixture and Projector by VGA Cable.

- Connect LED Calibration Fixture and CL200 by CL200 RS232 Cable(42.89509.001).

- Connect LED Calibration Fixture and Computer by USB Cable.

- Power on the projector and get into Service Mode

- Press "Enter into LED Calbration"

- Press "LED Calibration" to start calibration and "finish" will appear in right blank.

Must be on the center of the screen
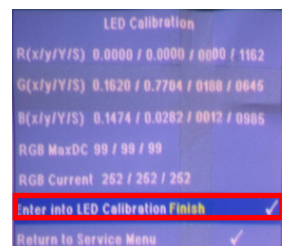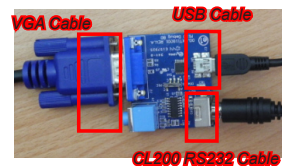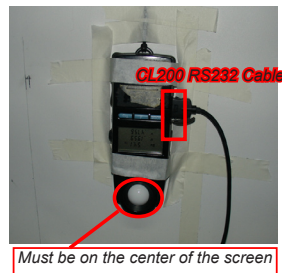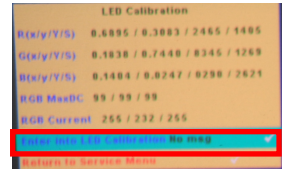
No.	Issue Description	Root Cause
4-5 Waive Items		Design limitation
2	Uneven image quality Line morie pattern	Design limitation,and it only found in line morie pattern.

1. VGA ripple (1280x800):

   Some certain PC sometimes can find slight

   ripple noise in Bliss wallpaper.

Bliss wallpaper

   * Waived by below reasons.

a. No any projector can ensure that it can be 100% no NB/PC compatibility issue.

b. ML300 major application is using on NB, we found only 3 NB sometimes can see the 1280x800 noise issue on 26 different NB test.

c. This issue only happened on 1280x800 mode of special pattern. if user occasionally found noise, we can guide him/her to change to 1280x768 or 1280x720 mode.

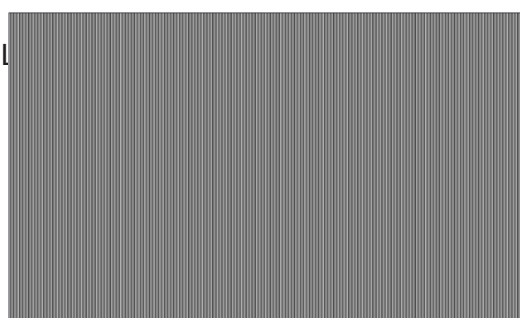2. Uneven image quality in Line morie pattern from Chroma signal generator:

   normal & uneven line morie comparison.

Uneven Line Morie

Normal Line Morie

4-6 Run In Test

- Temperature: 29°C~35°C

- Circumstance brightness: Normal environment

- Screen size: No concern

- Display mode: ECO mode

- After repairing each unit, it should be Run-in (refer to the below table).

Symptom	Run-in Time
Normal repair	2 hours
NFF	4 hours
Auto shut down	6 hours

- Get into Burn-In Mode

Cycle setting is based on the defect symptoms. ie: If it is NFF, the run-in time is 4 hours. You have to set the LED on for 60min. and LED off for 15 min for 2 cycles.

Note: Please make sure that the hot exhaust airflows from projectors can flow towards the aisle.

Press "Up"->"Home"->"Down"->"Zoom" of remote controller	
Choose Burn In Test > enter	
Lamp On (Min)	Press right key to adjust the time (60)
Lamp Off (Min)	Press right key to adjust the time (15)
Set Burning cycle	Press right key to adjust the cycle
After setting up the time, choose "Start Burn In Mode" and press "O" button of remote controller.	

4-7 Test Inspection Procedure

1. Check Points

Check item	Check point
Firmware version	All firmware version must be the lastest version
TB implementation	Related TB must be implement
Cosmetic	Cosmetic can not be broken
Logo	Missing logo, missing prints and blurry prints are unacceptable
Lamp cover	It should be locked in the correct place.
Zoom in/out	The function should work smoothly
Keypad	All keypad buttons must operate smoothly

2. OSD Reset

1. After final QC step, we have to erase all saved change again and restore the OSD default setting. The following actions will allow you to erase all end-users' settings and restore the default setting:

   (1) Please get into OSD menu.

   (2) To execute "Reset" function.

Chapter 5

Firmware Upgrade

Section 1: System Firmware Upgrade

5-1-1 Equipment Needed

Software : (DDP6401-USB)

- DLP Composer Lite v10.5

- Firmware (*.img)

- Library (library 10.5)

Hardware :

- Projector

- Adapter (47.8LU01G001)

- Power cord (42.0010AG002)

- Cable USB micro B-M to USB A-M 1000MM (42.0028DG001)

- PC or Laptop

- Remote control (45.8LU01G001)

Note1: We will show the hot key of FW mode and how to check FW version,the other contents please refer to common manual .

Note2: During FW upgrade procedure,please select "32KB" in "Skip Boot Loader Area".

5-1-2 Firmware Upgrade Procedure

1. Set-up

   - Plug in power cord into the projector, press "Home"button,"Hide"button,"Left" button sequentially of remote control until LED indicator of the projector light orange all the time,press "Power " button of remote control, the projector will flash blue in a moment . When the LED indicator of the projector have no light on ,this projector has been got into firmware mode .

   - Insert Micro USB cable to ML300&PC

5-1-3 Check FW version

1. Restart the unit and enter the Service Mode (Press "Up"->"Home"->"Down"->"Zoom" of remote control)

2. The firmware version will be shows as red square .
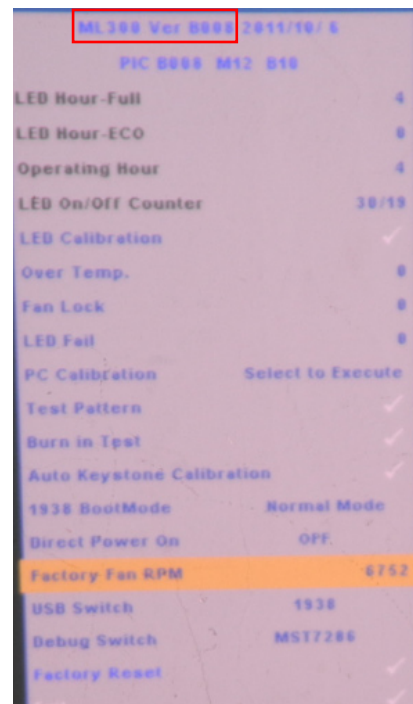
Section 2: Pic FW Upgrade (RS232)

5-2-1 Equipment Needed

Software :

- ML300_Pic FW_All_Ver.XX(*Hex)

- PICGA002 Downloader

Hardware :

- Adapter (47.8LU01G001)

- Power cord (42.0010AG002)

- VGA Cable (42.00200G004)

- RS232 Cable DSUB(F)9-DIN(M)6) (42.89509.001)

- USB Cable mini USB to USB (A) (42.00284G001)

- Debug Board (80.8KT11G001)

- Projector

- PC or Laptop

5-2-2 PIC Firmware Upgrade Procedure

1. Set up

 - Plug in the RS232 cable to RS232 port of fixture and PC.

 - Plug in the VGA cable to VGA port of fixture and ML300.

 - Plug in the USB cable to VGA port of fixture and PC.

 Note:The position of fixture's pin as right picture shown.

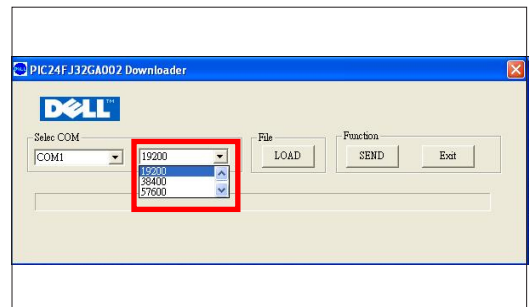 - Press"Power",plug in the power cord ,until the LED Indicator flash orange release the power button.
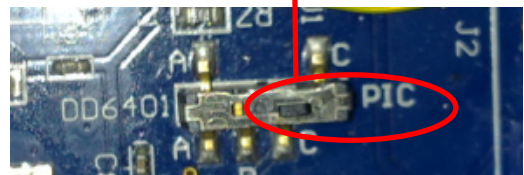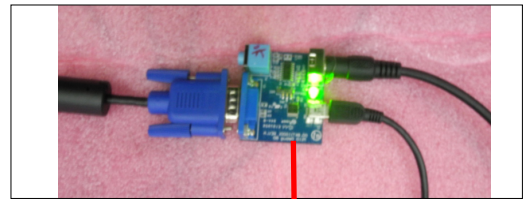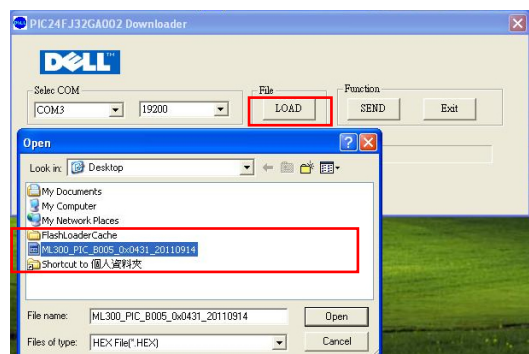

2. Execute the "PICGA002 Downloader" file.

3. Select the COM Port which you are using.
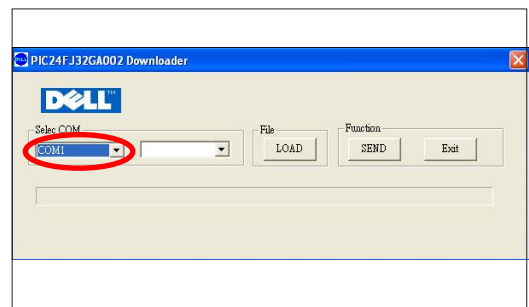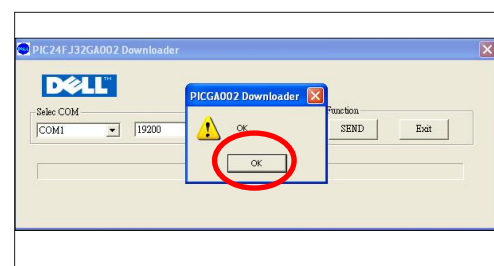

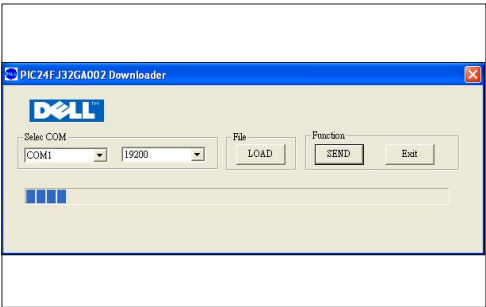4. Select "19200".

5. Click "LOAD" to search the PIC FW file.

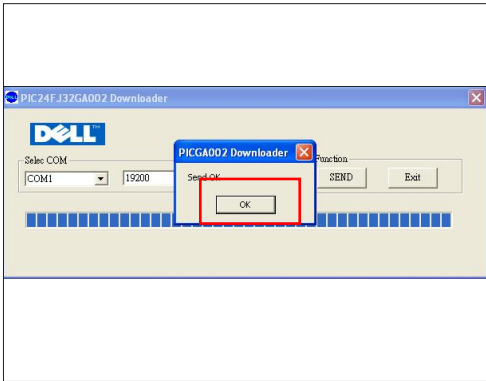6. Click "SEND".

7. Click "OK".

8. The firmware upgrade procedure will run
   automatically.

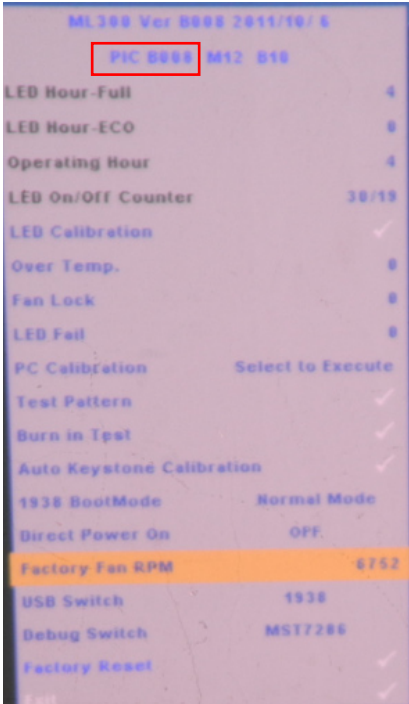

9. Click "OK",then close the window.

5-2-3 Check FW version

1. Restart the unit and enter the Service Mode

   (Press "Up"->"Home"->"Down"->"Zoom"

   of remote control)

2. The firmware version will be shows as red

   square .

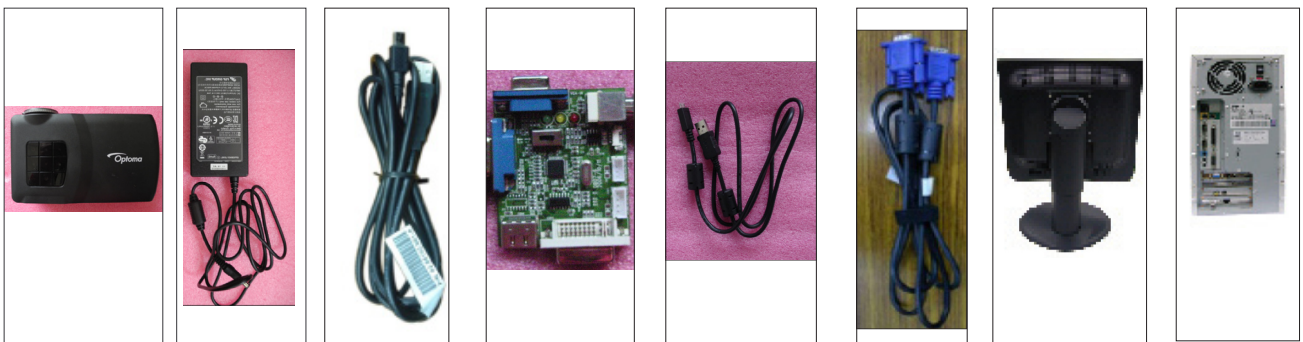# Section 3: MST7286 Firmware Upgrade Procedure

5-3-1 Equipment Needed

Software :

    - ML300 MST7286 FW file(.BIN)

    - Mstar Tool.exe

Hardware :

    - Projector

    - Adapter (47.8LU01G001)

    - Power cord (42.0010AG002)

    - Debug Board (75.8GA01GR01)

    - USB cable (42.00281G102)

    - VGA Cable (42.00200G004)

    - Monitor

    - PC

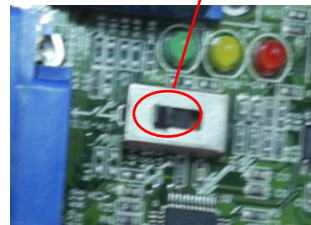## 5-3-2 USB Driver Upgrade Procedure
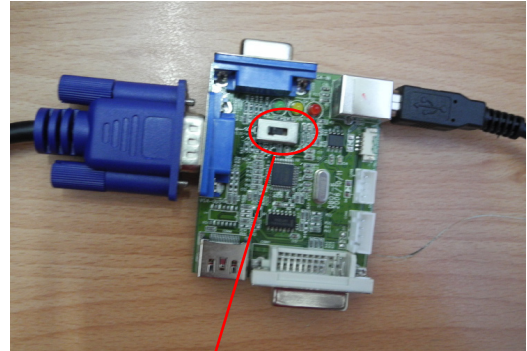
1. Set-up

   (1) Insert one side of the VGA cable into the

      debug board and connect it to PC by

      USB cable.

    Note:-The VGA cable is special,the PN is

      42.00200G004.
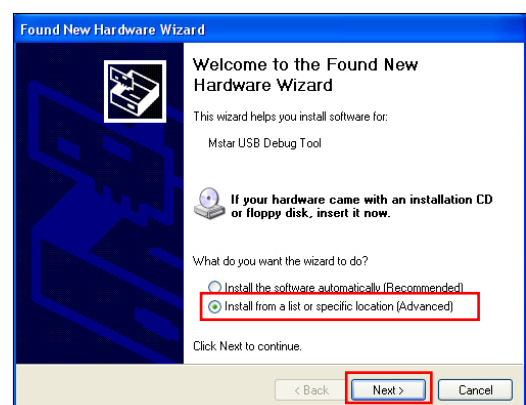
       -The position of fixture's pin as right
        picture shown.

   (2) Insert another side of the VGA cable and

      power cable into projector.

2. Execute Program
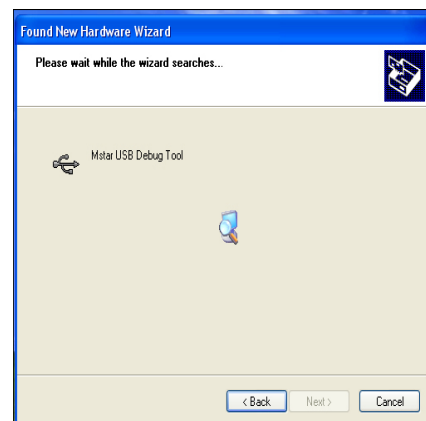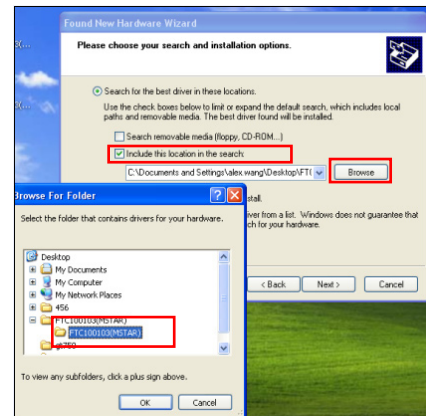
   (1) "Found New Hardware Wizard" picture will

      appear on the screen.

   (2) Select "Install from a list or specific

      location (Advanced)".

   (3) Click "Next".

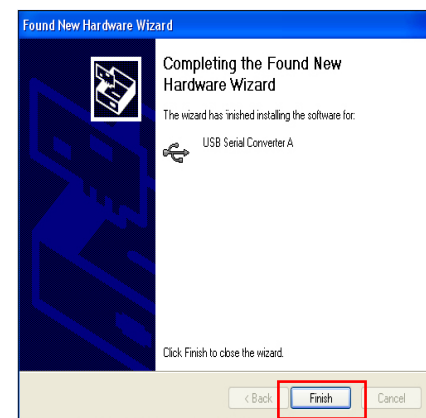4) Select "Include this location in the search", then click "Browse".

(5) "Browse For Folder" picture will appear on the screen.

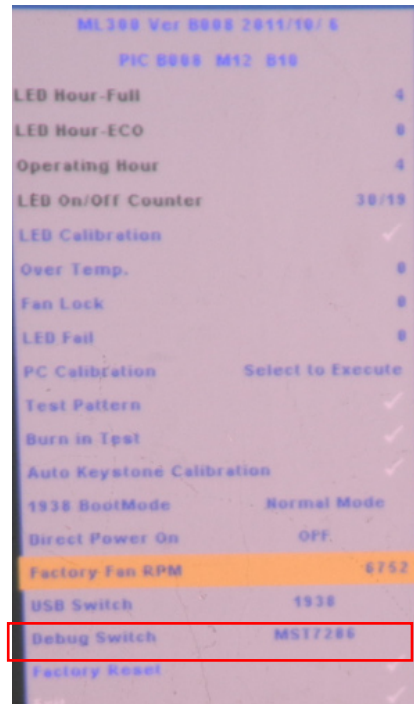(6) Select "FTC100103(MSTAR)" folder, then click "OK".

(7) Click "Finish".

Note: If the PC appear "Found New Hardware Wizard" picture again, repeat step 2 to install USB Drivier once more.
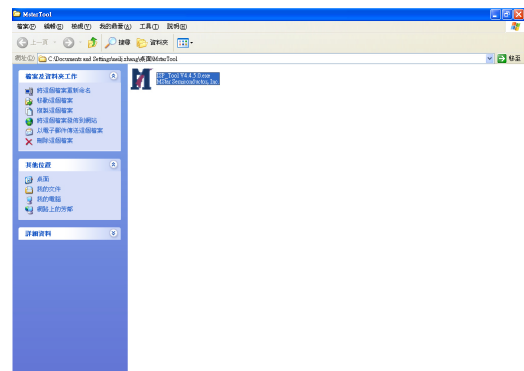
5-3-3 MST7286 Firmware
Upgrade Procedure

1. Press "power button" and power on the
   projector.Enter into the Service Mode ("Up"->"
   Home"->"Down"->"Zoom"),then
   select "Debug switch ",select "MST7286"

2. Unzip the "Mstar Tool.zip" and double click
   "ISP_Tool V4.4.5.0.exe"

3.- Select "Read" to search the FW file.

   - Select "Open"
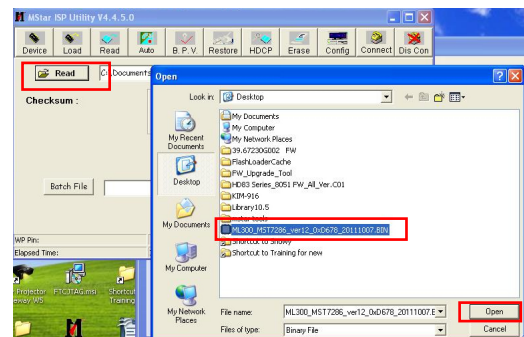
4. Select "Device" and double click "MX25L8005"
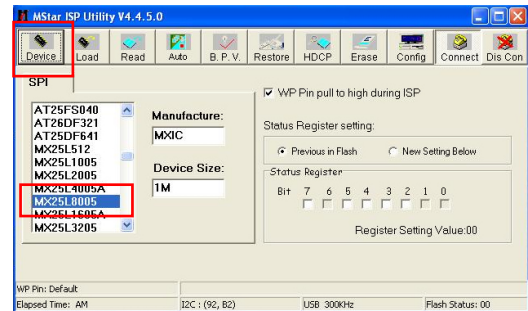
5. - Select "Connect"

   - Make sure the device type is "MX25L8005"

   - Click "OK".
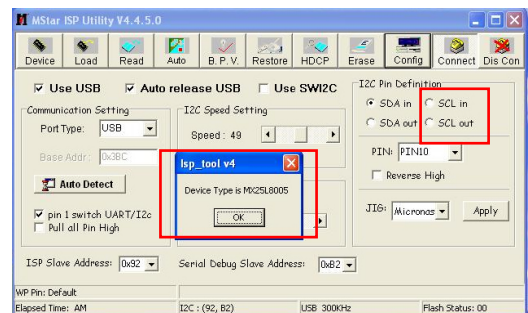
5. - Select "Auto"

   - Cancel "ReConnect"

   - Select "Run " to "Start Download".
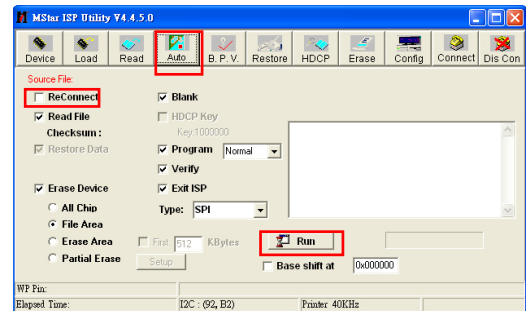
6. When download finished, the green character

   "Pass" will show.
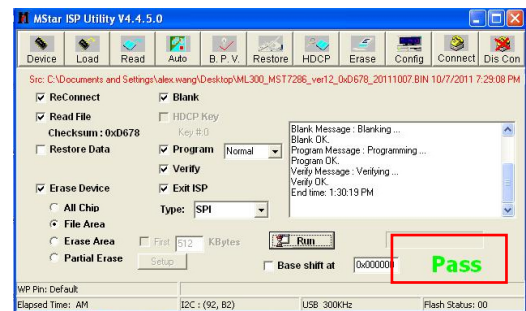
5-3-3 Check FW version

1. Restart the unit and enter the Service Mode

   (Press "Up"->"Home"->"Down"->"Zoom"

   of remote control)

2. The firmware version will be shows as red

   square .
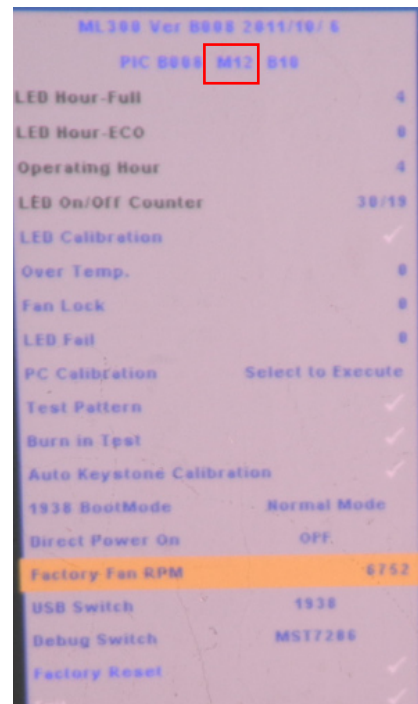
Section 4 SSD1938 FW Upgrade

5-4-1 Equipment Needed

Software :

- Upgrade.zip

Hardware :

- Projector

- Power cord

- PC or Laptop

- Adapter

- micro SD Card

5-4-2 SSD1938 Firmware Upgrade Procedure

1.Unzip the file and copy the file to micro SD Card

   by PC.

2.Insert SD card to projector.

3.Turn on the projector ,then select "Setup"

4.Select "System"

5. Select "Information"
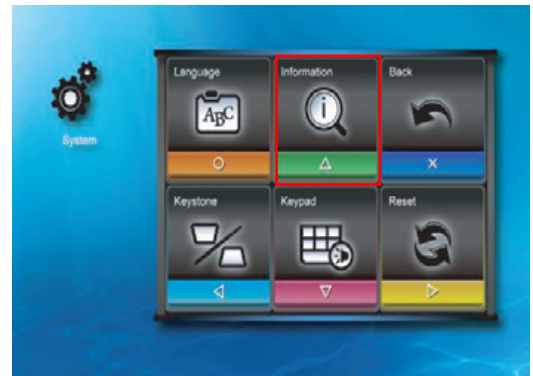
6.Select "Firmware Upgrade" item

7.Choose "O" button to process the firmware
upgrade.

8. Firmware upgrade procedure image will
appear as the right picture shown.

*Note:1.Do not touch any buttons or turn off
the projector while upgrading is in
progress.Otherwise, this may damage the
projector.*
  *2.Do not remove the microSD card until the
upgrade is complete.*

9. When the screen below appears, update is

  complete. Press and hold the Power button for

  6 seconds to turn off the projector

5-4-3 Check FW version

1. Restart the unit and enter the Service Mode

  (Press "Up"->"Home"->"Down"->"Zoom"

  of remote control)

2. The firmware version will be shows as red

  square .
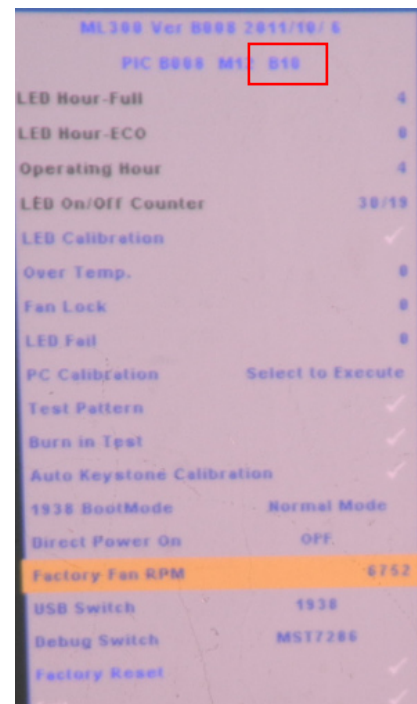
EDID Upgrade

6-1 Projector EDID Upgrade Procedure

- The upgrade procedure for VGA and HDMI ports please refer to common manual chapter 6.

- Please use " EDID 0.67exe" Program and Key in the serial number into the "Unit No" blank space.

Appendix A

Exploded Image

D.C.
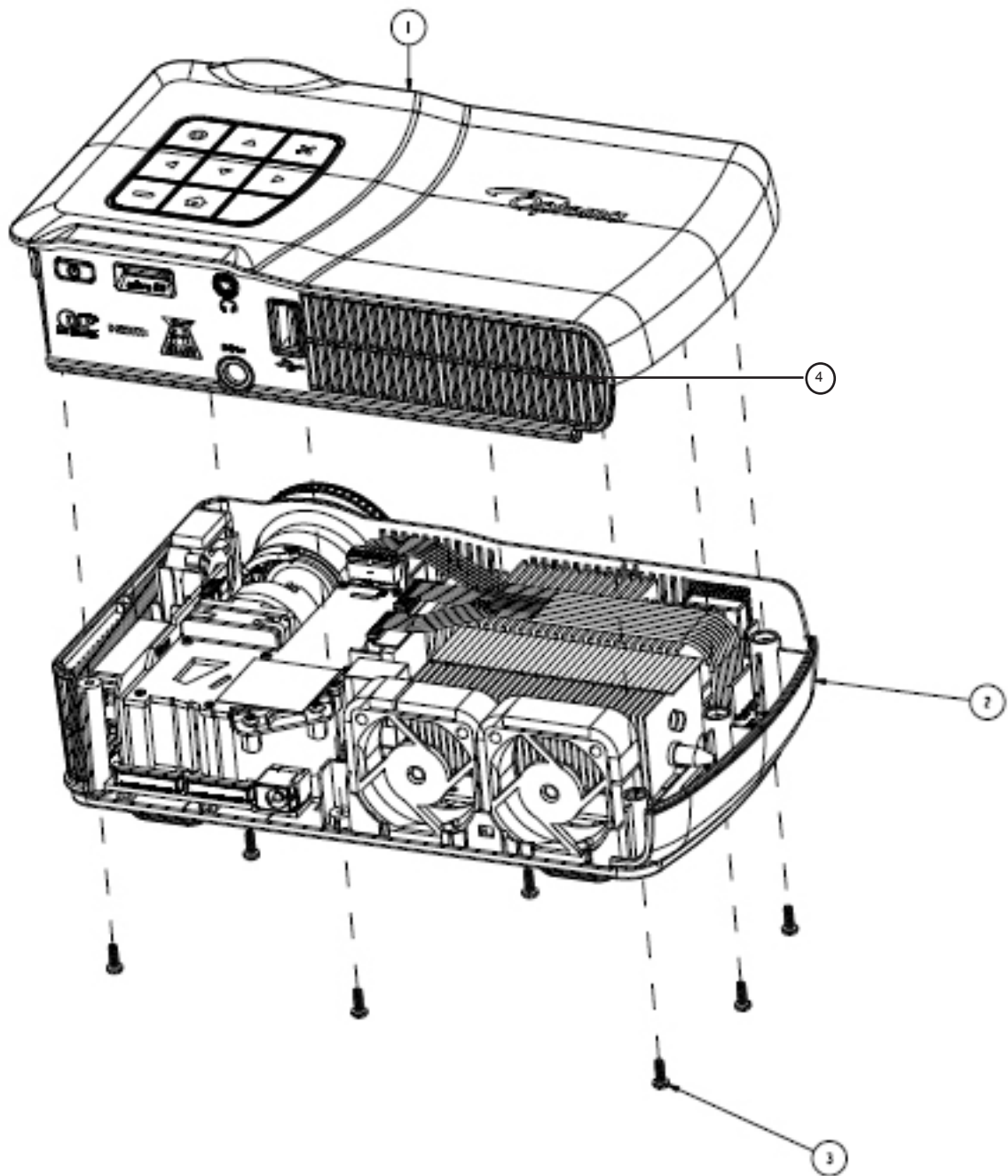
Item	P/N	Description	Part Supply
1	51.8LU02G001	TOP COVER LN-2520A ML300	
2	75.8LU02G001	BUY ASSY BOTTOM COVER ML300	V
3	85.1A522G060	SCREW PAN MECH M2*6 Ni NYLOK	
4	75.8LU01G001	BUY ASSY IO COVER ML300	V
5	23.8KW15G001	PT39,RED LED,Standard Die Config,D51 220LM,Luminus	V
6	23.8KW15G002	PT39,GREEN LED,Standard Die Config,D51 220LM,Luminus	V
7	23.8KW15G003	PT39,BLUE LED,Standard Die Config,D51 220LM,Luminus	V
8	80.8LU02G001	PCBA DMD BD FOR ML300 PROJECTOR	V
9	48.8KU01G001	DMD 1140x910 PIXEL 0.45" WXGA DDR Type Series 310 DMD "TI"	V

Assy Top Cover Module
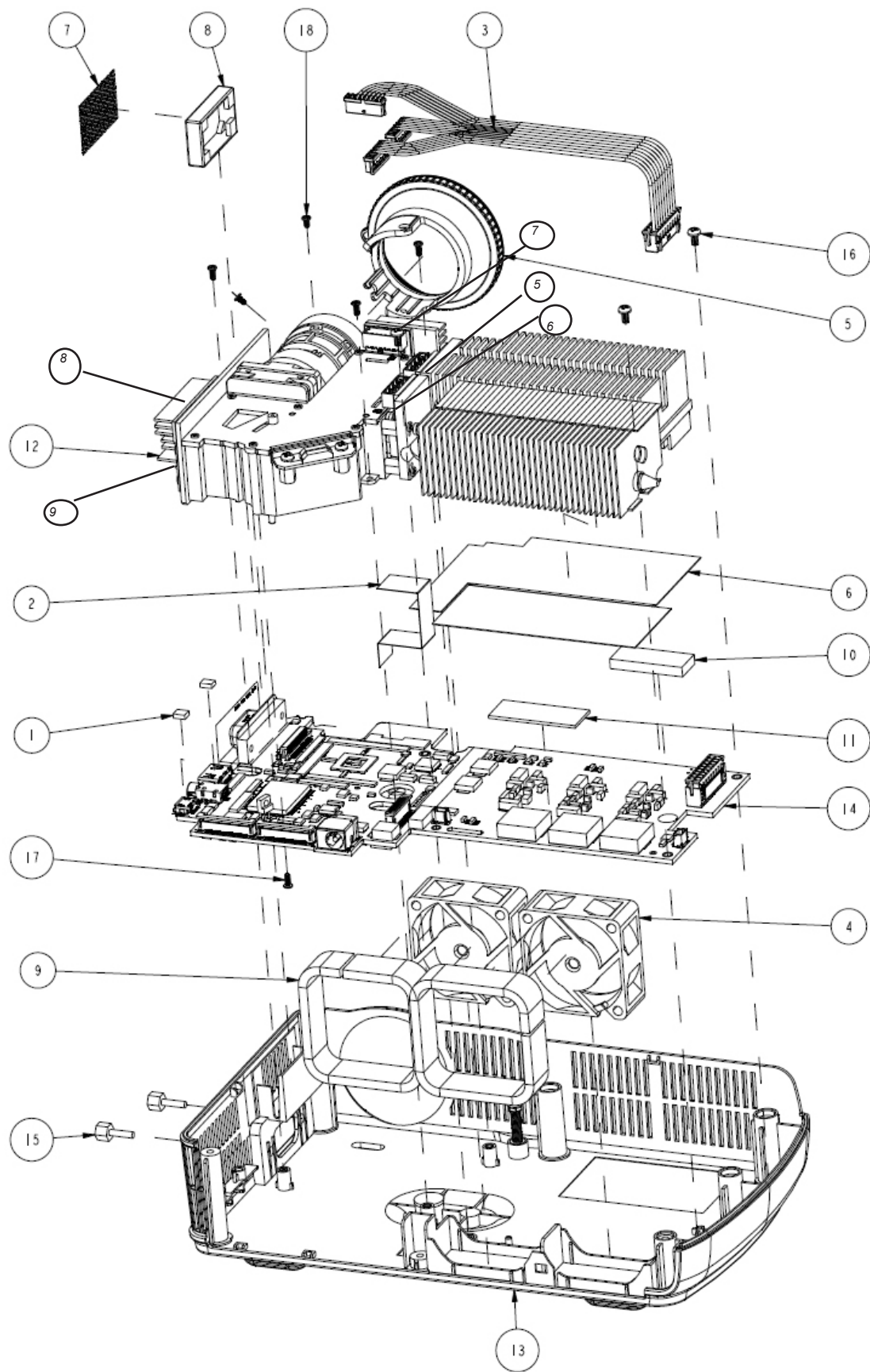
Item	P/N	Description	Part Supply
1	41.83F22G001	GASKET W*5, H*1.5, L*7	
2	42.0030WG002	FFC 30P P=0.5 M/B TO DAUGHTER/B 90mm AD TYPE WITH TAPE ML300	
3	75.8LU02G002	BUY ASSY BOTTOM COVER ML300	V
4	51.8LU07G001	KEYPAD P+R ML300	
5	52.8LU05G001	PORON FOR TOP COVER ML300	
6	75.8LU01G001	BUY ASSY IO COVER ML300	V
7	80.8LU03G001	PCBA KEYPAD BD FOR ML300 PROJECTOR	V
8	80.8LU06G001	PCBA DAUGHTER BD FOR ML300 PROJECTOR	V
9	85.1A522G060	SCREW PAN MECH M2*6 Ni NYLOK	
10	85.3A522G030	SCREW CAP MECH M2*3 Ni NYLOK	

Assy Bottom Cover Module
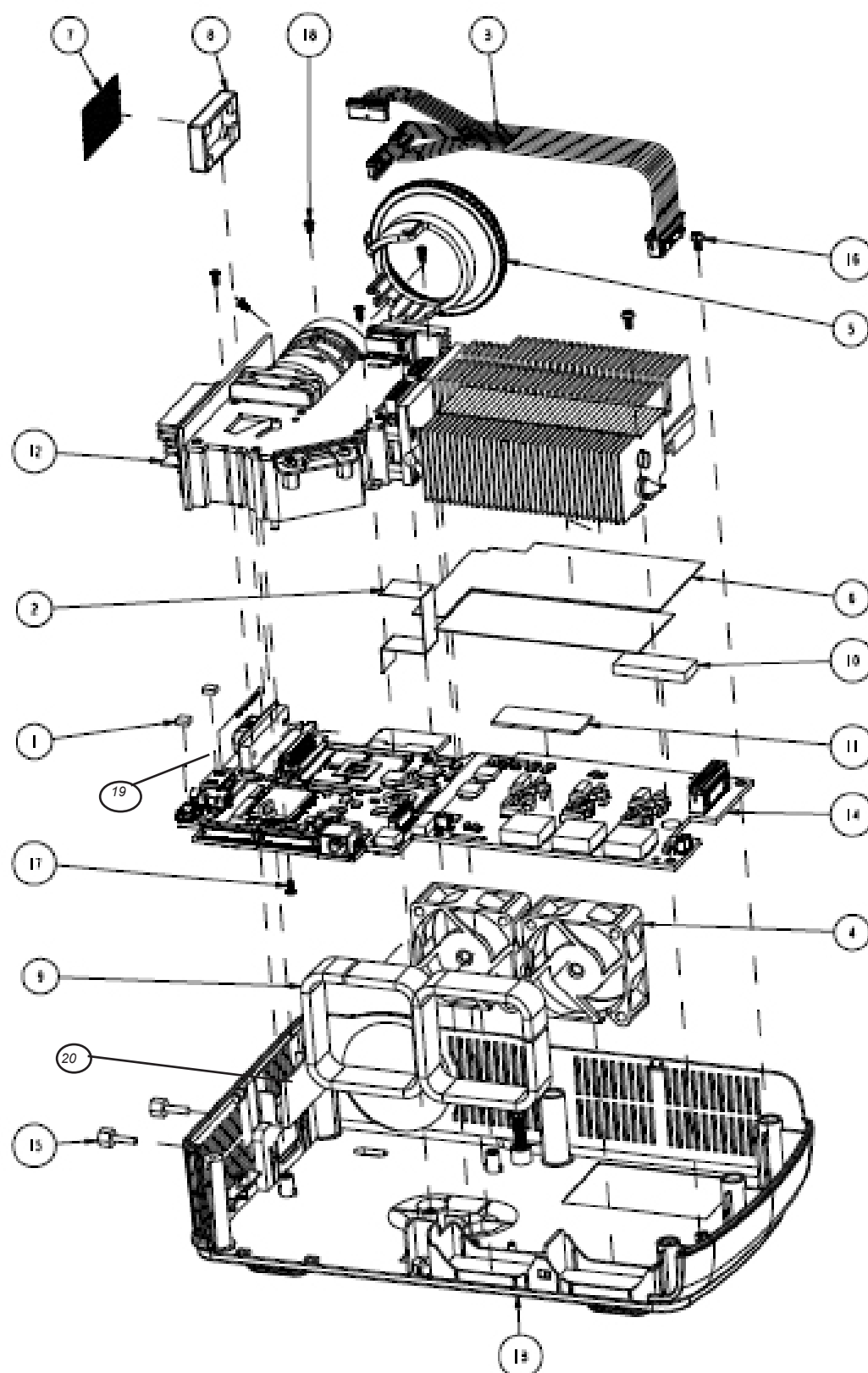
Item	P/N	Description	Part Supply
1	41.8LU01G001	EMI Gasket P-type W10*H1.5*L7mm	
2	42.0030VG001	FFC 20P P=0.5 M/B TO KEYPAD/B 120mm AD TYPE ML300	
3	42.00538G001	W.A. 18PIN #24 135/110mm M/B TO LED MODULE ML300	
4	49.8FS01G001	DELTA 35*15 AXIAL FAN	V
5	51.8LU04G001	FOCUS RING MN-3600HA ML300	
6	52.8LU06G001	PORON FOR HEAT PIPE ML300	
7	49.8LU01G002	SPEAKER MINI 2W 4ohm 60mm W-BEST ML300	V
8	52.82L04G001	RUBBER SPEAKER SILICONE RUBBER ARES	
9	52.8LU04G001	SPONGE FOR AXIAL FAN ML300	
10	52.8LU05G001	PORON FOR TOP COVER ML300	
11	52.8LU06G001	PORON FOR HEAT PIPE ML300	
12	70.8LU08GR01	ASSY ENGINE MODULE 8LU(SERVICE)	V
13	75.8LU02G002	BUY ASSY BOTTOM COVER ML300	V
14	80.8LU01G001	PCBA MAIN BOARD FOR ML300 PROJECTOR	V
15	85.005AGG408	SCREW HEX I/O #4-40 H4*L8 NI NYLOK	
16	85.1A522G040	SCREW PAN MECH M2*4 Ni NYLOK	
17	85.RA121G040	SCREW CYLINDER MECH M1.6*4 D2.5-T0.5 Ni	
18	85.RA321G030	SCREW CYLINDER MECH M1.6*3 D2.5-T0.5 BLACK	
19	80.8LU08G001	PCBA SENSOR BD FOR ML300 PROJECTOR	V
20	49.8LU02G011	SUNON 20x20x10 AXIAL FAN, F type, RoHS2.0	V

Assy Packing Drawing
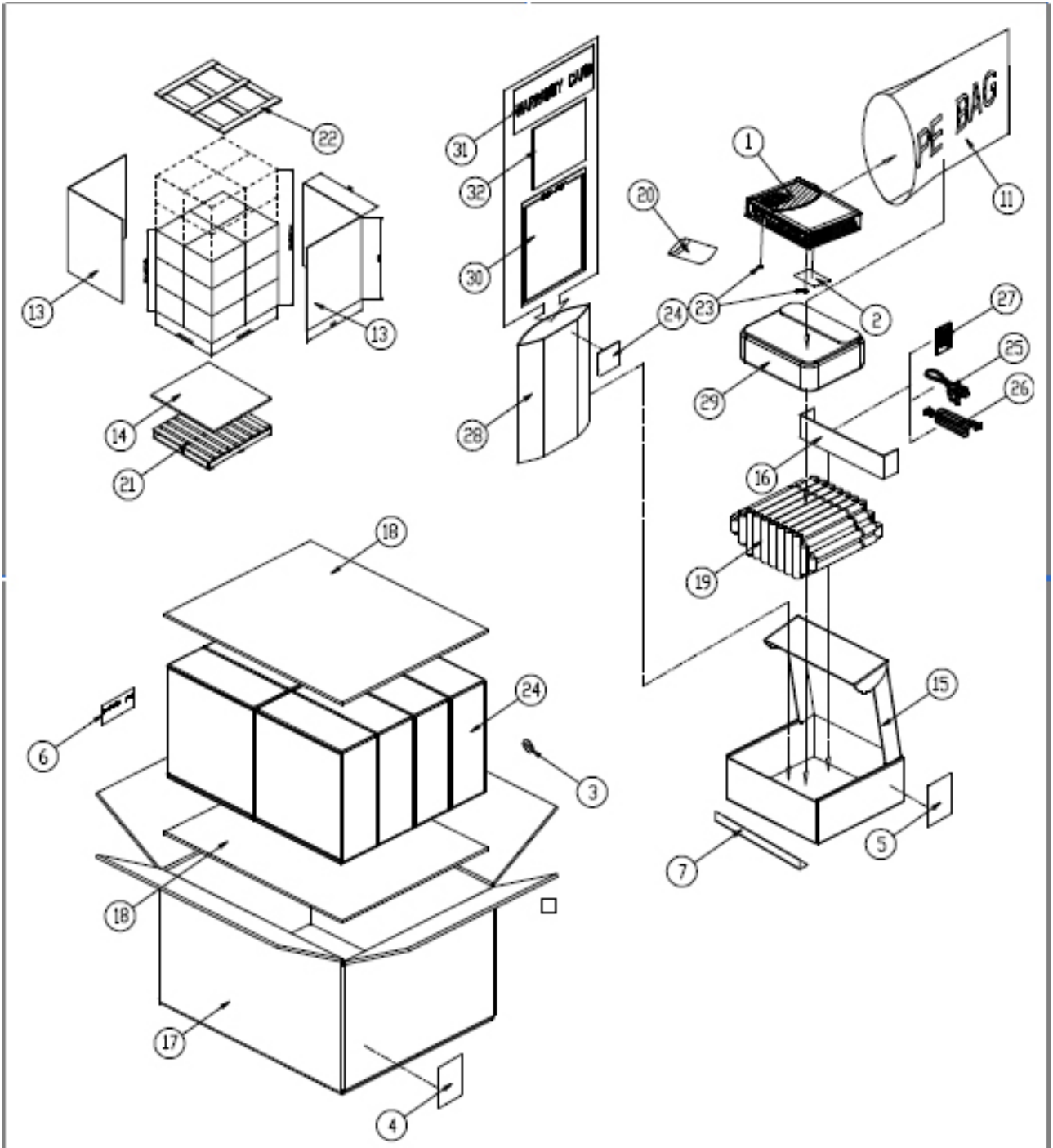
ITEM	P/N	DECRIPTION	Supply
1	DC.8LU01G00A	D.C.ML300	
2	35.8LU01G001	SPEC LABEL ML300	
3	35.00040G001	LABEL 30mm,GREEN	
4	35.52302G091	LABEL CARTON 108*92 BLANK	
5	35.86301G031	UNIT BOX LABEL WHITE PK-101	
6	35.80N05G001	PALLET LABEL (W)100mm X(H)53mm FOR OPTOMA MODEL	
7	51.0000AG011	PACKING TAPE 72MM FOR OPTOMA	
8	51.00037G001	TRANSPARENT TAPE 2.4cm	
9	51.00069G001	PACKING STRAP 13.5MM*1500M*0.7MM GREEN	
10	51.00070GC01	PE STRETCH FILM 500MM*1500M*0.02MM GREEN FOR CPC	
11	51.00174G002	PE BAG 380*310*0.07mm FOR OPTOMA	
12	51.86848G001	3 INCH*100m WHITE ADHESIVE	
13	55.83R03G002	L TYPE PAPER 1190x1000x1350 EP747	
14	55.87202GC01	BOTTOM PAPER COVER PLATE 1230*	
15	55.8LU02G001	UNIT BOX ML300	V
16	55.8LK02G001	CARDBOARD ML500	
17	55.8LU01G001	CARTON OUTSIDE BOX AB FLUTE ML300	V

ITEM	P/N	DECRIPTION	Supply
18	55.8LU03G001	PAPER PARTITION ML300	
19	56.8LU01G001	AIR BAG ML300	
20	57.00001G001	PACK SIO2 DRIER 20g	
21	58.54603G002	NEW WOOD PALLET120*100*13cm (DOUBLE FACE) FOR COMPAQ	
22	58.54604G001	COVER PALLET 120*100cm FOR COMPAQ	
23	52.8GA01G001	RUBBER FOOT SILICON DV20+	
24	35.82001G111	AK LABEL 3"*3" BLANK	
25	42.00109G001	CABLE POWER CORD 0.5M SP305B/IS034 US PK-301	V
26	42.00200G005	CABLE VGA 15P 1.8M BLK EP739	V
27	45.8LU01G001	REMOTE CONTROL FOR ML300	V
28	51.80135G002	PE BAG ZIPPER 240*170*0.04 #8 FOR OPTOMA	
29	53.8LU01G001	SOFT BAG ML300	V
30	36.8LU01G001	QUICK START CARD MULTILINGUAL ML300	
31	36.00024G021	WARRANTY CARD US FOR OPTOMA, 1 YEAR W/O BATTERY	
32	36.00040G011	INSTRUCTION CARD (OPTOMA)-BEFORE RETURN FOR PICO	
33	42.00233G001	CABLE 2.5MM MINI JACK-M TO 3*RCA-F R/W/Y 300MM	V
34	42.0028DG001	CABLE USB MICRO B-M TO USB A-M 1000MM	V
35	47.8LU02G001	AC ADPTER IN:100-240V OUT:19V/4.74A FOR ML300(HIPRO)	V

Appendix B

I. Serial Number System Definition

Serial Number Format for Projector

Q	8LU	1	08	AAAA A	C	0001
①	②	③	④	⑤	⑥	⑦

① : **Q = Optoma**

② : **8LU = Project code**

③ : **0 = Last number of the manufacture year (ex:2011 = 0)**

④ : **08 = week of the manufacture year (ex:the eighth week of the year = 08)**

⑤ : **AAAAA= Not Defined**

⑥ : **C = Manufacture factory (CPC)**

⑦ : **0001= Serial Code**

EX: Q8LU008AAAAC0001

This label represents the serial number for ML300. It is produced for USA at CPC on eight week of 2011.

II. PCBA Code Definition

PCBA Code for Projector

<u>A</u>   <u>B</u>   <u>XXXXXXXXX</u>   <u>C</u>   <u>XXX</u>   <u>EEEE</u>
①   ②   ③   ④   ⑤   ⑥

①   :   **ID**

②   :   **Vendor Code**

③   :   **P/N**

④   :   **Revision**

⑤   :   **Date Code**

⑥   :   **S/N**